ANNEX B (Marked-Up Version)

(Page 37 of Specification)

Since the Imidazolinium ion ($Im^+$) affects the wet end charge demand and imparts softness to the tissue, it is useful to compare the debonding abilities of the formulations in retained $Im^+$, as in **Figure 3** which is a plot of percent change in dry breaking length vs. actual retained $Im^+$. According to the data in **Figure 3** the order of debonding ability is L = M > K > N.

In practice, the user will be concerned with the as-received add-on and not pure $Im^+$. The actual retained as-received formulation is shown in **Figure 4**. We see that, except for possibly formulation M, all the formulations fall on the same curve. Since the PEG-200-diester provides equal debonding at less quat add-on, one can attain more debonding with higher doses of formulation L without impacting furnish charge demand; that is, formulation L allows us to move further down the curve. Similarly because formulation K contains some PEG-200-diester, it allows one to move further down the curve than possible with pure imidazolinium (i.e., formulation N). It is unclear whether formulation M actually falls on a new curve below the main curve. If so, greater debonding is expected with M than the other formulations at equal dosages.

While lauramine oxide is effective at increasing fiber debonding, it nevertheless competes with the imidazolinium quat for sites on the fibers. This is disadvantageous as lauramine oxide is not as an effective softener as the ~~imidaolinium quat.~~imidazolinium quat.

Surprisingly, it has been found the ability of the synergistic quaternary ammonium/nonionic surfactant debonding compositions to reduce tensile correlates with the hydrophilic lypophilic balance (HLB) of the nonionic surfactant employed in connection with the process.

APPENDIX B (Marked-Up Version)

(Amended Claims 18 and 31)

18. In a process for making an absorbent sheet material from a web of fibrous material consisting predominately of cellulosic recycle fiber, the improvement which comprises treating the fibrous material with a debonding composition which includes a synergistic combination of:

(a) a quaternary ammonium surfactant component and

(b) a nonionic surfactant component;



wherein said nonionic surfactant component is selected from the group consisting of group c, d or e and wherein group:

(c) are monoalkylated nonionic surfactants comprising alkoxylated fatty acids or alkoxylated fatty alcohols having an **HLB** value of greater than about 10 wherein said fatty acids and fatty alcohols have 12 carbon atoms or more;

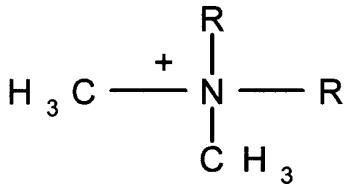
(d) are dialkylated nonionic surfactants comprising alkoxylated fatty acids or alkoxylated fatty alcohols with an **HLB** value of greater than about 10 wherein said fatty acids or fatty alcohols have about 16 carbon atoms or more;

(e) are dialkylated nonionic surfactants comprising alkoxylated fatty alcohols or alkoxylated fatty acids having an **HLB** value of less than ~~bout~~ about 10 and wherein said fatty alcohols and fatty acids have about 16 carbon atoms or less.

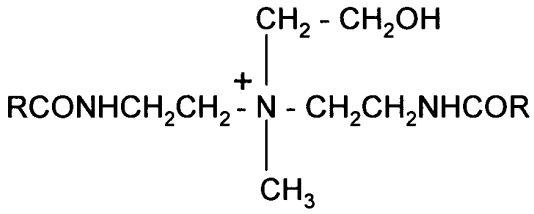
31. In a process for making an absorbent sheet material from a web of fibrous material consisting predominately of cellulosic recycle fiber, the improvement which comprises treating the fibrous material with a debonding composition which includes a synergistic combination of:

(a) a quaternary ammonium surfactant component comprising a surfactant compound selected from the group consisting of:

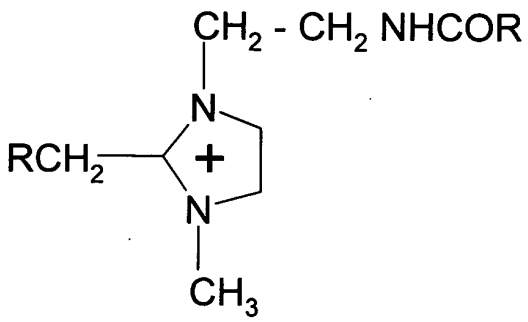
a dialkyldimethylammonium compound of the formula:



a bis-dialkylamidoammonium compound of the formula:



; and a dialkylmethylimidazolinium compound of the formula:




wherein each R may be the same or different and each R indicates a hydrocarbon chain, saturated or unsaturated, having a chain length of from about twelve to about twenty-two carbon atoms; and wherein said compounds are supplied to the fibrous material with a suitable anion; and

(b) a nonionic surfactant component.

wherein the debonding composition is operable to reduce the tensile strength of said sheet by at least about 25 percent by application to said fibrous material at a treatment level of 1 mole of said quaternary ammonium surfactant component per ton of fibrous material and further, wherein said nonionic surfactant component is present in said debonding composition in an amount of from about 25 to 60 weight percent based on the combined weights of said nonionic surfactant component and said quaternary ammonium surfactant component.